

WHAT IS CLAIMED IS:

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- 11 12. An optical probe for the non-invasive measurement of characteristics of a medium, said optical probe comprising:
- an emitter which transmits optical radiation;
 - a detector configured to detect said optical radiation after attenuation through said medium;
 - a flexible circuit assembly extending between said emitter and said detector, said flexible circuit assembly having electrical circuit paths for said detector and said emitter; and
- 10 a cushion positioned between said detector and said emitter along said flexible circuit.
- 2 13. The optical probe of Claim 12, further comprising a flexible backing supporting said flex circuit.
- 3 14. The optical probe of Claim 12, said cushion being formed in said flexible circuit between said emitter and said detector so that said cushion abuts a patient's fingertip when said optical probe is attached to said fingertip.
- 15 4 15. The optical probe of Claim 12, further comprising an optical cavity containing said detector.
- 5 16. An optical probe for the non-invasive measurement of characteristics of a medium, said optical probe comprising:
- 20 an emitter which transmits optical radiation;
- a detector configured to detect said optical radiation;
 - a flexible circuit assembly extending between said emitter and said detector; and
- 25 a substrate which forms a surface of said flex circuit assembly, said substrate constructed to have a V-configuration, said emitter and said detector positioned on opposite branches of said V-configuration.
- 6 17. The optical probe as defined in Claim 19, flexible backing sized to affix to a member of a newborn baby.
- 30 7 18. the optical probe of Claim 20, wherein said member is a foot.

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